



Report to the Auburn City Council

Action Item
Agenda Item No. 7
City Manager's Approval

To: Mayor and City Council Members
From: Reg Murray, Senior Planner
Date: March 14, 2011
Subject: Presentation – Greenhouse Gas Emissions Inventory by the Sierra Business Council

The Issue

This is a staff report about the Greenhouse Gas Emissions Inventory conducted by the Sierra Business Council. No action is requested or required. This is informational only.

Conclusions and Recommendation

The Sierra Business Council will present an overview of the Greenhouse Gas Emissions Inventory and relevant findings.

Background/Analysis

On October 11, 2010, the Auburn City Council considered an invitation by the Sierra Business Council (SBC) to participate in the Green Communities Program (see Attachment 1). The SBC notes that the program is intended to provide innovative energy efficiency and climate change solutions for local governments and communities in the Sierra Nevada region within PG&E service areas. The Council voted at the October hearing to authorize the City's participation.

Since that time, City staff worked with the Sierra Business Council to assist in data gathering and compilation of the final inventory report. The inventory report (Attachment 2) identifies the general methodology of the study and details the results. The inventory concludes that the City of Auburn's two largest sectors for emissions are the vehicle fleet and the wastewater treatment plan, and recommends that the City can reduce future emissions by utilizing more fuel efficient vehicles in its vehicle fleet and encouraging reductions in employee commutes. The report also suggests how the City can use the inventory and the future steps the City can take.

Ms. Chrissy Prestella, Program Manager with the Sierra Business Council, will provide a presentation to review the Green Communities Program as well as the findings of the Greenhouse Gas Emissions Inventory.

Additional Information

Please see the following for more details:

ATTACHMENTS

1. City Council Staff Report – October 11, 2010
2. Greenhouse Gas Emissions Inventory dated March 2011



Report to the Auburn City Council

Action Item

Agenda Item No.

City Manager's Approval

To: Mayor and City Council Members
From: Reg Murray, Senior Planner *RM*
Date: October 11, 2010
Subject: Green Communities Program by the Sierra Business Council

The Issue

Should the City Council authorize the City's participation in the Green Communities Program offered by the Sierra Business Council.

Conclusions and Recommendation

The Auburn Community Development Department recommends that the City Council take the following action:

- A. By Resolution, authorize the Community Development Director to sign the Green Communities Participation Agreement on behalf of the City of Auburn.

Background/Analysis

The Sierra Business Council (SBC) has invited the City of Auburn to participate in the Green Communities Program. The Green Communities Program is a multi-phase program approved and overseen by the California Public Utilities Commission (CPUC), administered by Pacific Gas and Electric (PG&E) using rate payer funds, and implemented in the Sierra Nevada region by the Sierra Business Council. The program is intended to provide innovative energy efficiency and climate change solutions for local governments and communities in the Sierra Nevada region within PG&E service areas. Attachment 1 provides a summary of the Program, with additional background information found in Attachments 2 and 3.

The ultimate goal of the Green Communities Program is to reduce energy consumption and greenhouse gas emissions in the Sierra Nevada, while promoting economic development, social fairness, and long-term environmental quality. Through the implementation of several energy efficiency programs, the Sierra Business Council has set specific goals related to energy conservation in the region and seeks to address and achieve these goals through a set of strategies that embrace and reinforce the broader sustainability objectives.

The purpose of the Green Communities Program is to engage, train and assist local governments to prepare greenhouse gas emissions inventories. Specifically, this program will offer a workshop training series at no cost to local government participants. Program participants will be paired with trained interns to provide additional staffing needed to conduct data collection, analysis, and inventory development. Local government program participants will also have free access to a software program, which will provide the participant with streamlined data collection and calculations of the inventory of emissions.

At the end of the Program, each participant will have a greenhouse gas inventory for their jurisdiction. Emissions inventories help to identify opportunities for energy savings and related operation cost savings for the City. A greenhouse gas inventory can be viewed as an energy audit tool for the City, pointing out where utilities usage is highest. The City can use this information to analyze and understand operational inefficiencies, providing a system for gaining efficiency and lowering energy related costs across the board.

The City's participation in the Program and conducting emissions inventories will also assist the City in future planning efforts, such as the development of a Climate Action Plan and the update of the City's General Plan. Emissions inventories can provide the City with baseline data for which the City can establish community-wide emission reductions through a broad range of integrated goals, objectives, policies and implementation measures.

As noted previously, the first phase of the Green Communities Program is to assist local governments to inventory greenhouse gas emissions from their municipal operations. Subsequent phases, depending on funding, may include conducting community wide greenhouse gas emissions inventories and the development of coordinated assistance in preparing Climate Action Plans for local governments. The Sierra Business Council is funded to assist at least ten local governments in the Sierra Nevada region for the first phase of the program, and has selected the City of Auburn as one of the local governments to assist.

Most other jurisdictions in Placer County are participating in the Green Communities Program or are developing their own programs. Placer County and Loomis are currently committed to the upcoming program, while the City of Lincoln is in the process of seeking authorization to participate. The Cities of Roseville and Rocklin are currently developing their own programs using their own resources.

Alternatives Available to Council; Implications of Alternatives

- Authorize the City's participation in the Green Communities Program.
- Do not authorize the City's participation in the Green Communities Program.
- Continue the request in order for staff to provide additional information for Council review.

Fiscal Impacts

No direct costs to the City. The Green Communities Program is funded by California utility customers and is administered by PG&E under the auspices of the California Public Utilities

Commission. The City would commit staff hours to participate in the program. Participation would include training, providing information to the Sierra Business Council, and coordination of data collection.

Additional Information

Please see the following for more details:

ATTACHMENTS

1. Green Communities Program Summary
2. Local Government Opportunity
3. Green Communities Program Rationale

EXHIBITS

- A. Resolution with Green Communities Participation Agreement



Green Communities Program Summary

Sierra Business Council
August 2010

Through Pacific Gas and Electric Company's (PG&E) Green Communities Program, Sierra Business Council will assist local governments in the Sierra Nevada in meeting statewide goals for reducing greenhouse gas emissions. Growing awareness of the impacts of global warming on California communities along with state mandates has led to the need for climate action planning. The Green Communities program will train and assist local governments to prepare Greenhouse Gas emissions inventories for municipal operations. Specifically, this program will offer a training series at no cost to participants. Local Government participants will be paired with trained interns to provide additional staffing needed to conduct data collection, analysis, and inventory development. At program's end, each participant will have a Greenhouse Gas Inventory for their jurisdiction.

Green Communities is a multi-phase program funded by California utility customers and administered by PG&E under the auspices of the California Public Utilities Commission. The initial phase of the program is to inventory greenhouse gas emissions from local government operations; in latter phases, community wide greenhouse gas emissions inventories will be conducted; and the final phase is to develop Climate Action Plans. The initial phase will be launched during the fall of 2010.

BENEFITS OF CONDUCTING A GREENHOUSE GAS INVENTORY

A greenhouse gas emissions inventory is an important first step in a jurisdiction's climate protection initiative. Quantifying emissions establishes a baseline against which to measure future progress and develops an understanding of the scale of emissions from the various sources within government operations. Local governments can dramatically reduce the emissions from their government operations by such measures as increasing energy efficiency in facilities and vehicle fleets, utilizing renewable energy sources, reducing waste, and conserving water. In addition to quantifying emissions, the inventory also provides the jurisdiction with collected energy usage data from all its operations, which can be used to target and track cost reduction efforts. The co-benefits of these measures may include lower energy bills, improved air quality and more efficient government operations. And, equally if not more important, is that completing the greenhouse emissions inventory demonstrates to state agencies that the jurisdiction is moving forward on state goals.

HOW YOUR INVENTORY WILL BE PRODUCED

PG&E's Green Communities program has engaged Sierra Business Council to work closely with Sierra Nevada local governments to provide professional training to their staff and to assist them in preparing greenhouse gas emissions inventories for municipal facilities and operations, and enlisting community interns to accomplish the bulk of the work. The program will use the "Local Government Operations Protocol," the greenhouse gas emissions accounting tool which has been adopted by the California Air Resources Board. The goal of the document is to provide local governments with a technically sound and consistent quantification methodology to develop greenhouse emission inventories, establish a baseline, and track progress over time. The protocol includes calculation methodologies for sources under operational control of local governments, including buildings and other facilities, streetlights and traffic signals, water delivery facilities, airport facilities, vehicle fleet, transit fleet, power generation facilities, solid waste facilities, wastewater facilities and other process and fugitive emissions.

WHO CAN ACCESS THIS OPPORTUNITY

The resources being offered through the Green Communities program is an opportunity that every eligible jurisdiction in the Sierra should consider. Sierra Business Council has received funding to assist ten

jurisdictions within the Sierra Nevada. Because the program is funded by the Public Goods Charge collected from ratepayers in PG&E service areas, only jurisdictions that receive gas and/or electric service from PG&E are eligible, accounting for 22 jurisdictions in the region served by the Sierra Business Council. The Green Communities program is also being offered in the Bay Area through the Association of Bay Area Governments and in the Central Valley through the Great Valley Center. The program has already been completed in the Monterey Bay area by the Association of Monterey Bay Area Governments.

The Green Communities program is based on the pilot completed in the Monterey Bay region in 2009. Sierra Business Council will select and convene ten local government participants and coordinate training workshops conducted by the organization who worked with the California Air Resources Board to develop the Protocol, Local Governments for Sustainability (ICLEI). Sierra Business Council will recruit and manage the interns, who will participate in the training along with the local government staff. Sierra Business Council will pair the interns with selected local government staff participants, providing additional staffing support needed to conduct data collections, analysis, emissions inventory development and, ultimately, a comprehensive report.

BENEFITS OF PARTICIPATION

The training will consist of three to four in-person trainings at a central location and two to three webinar trainings online. These trainings are a no cost opportunity for local governments to build capacity in the understanding of and response to climate change issues, both as they affect local communities and as regulatory requirements move forward. The training program and related data collection is currently scheduled to begin in October 2010 and continue through January 2011. The completion of the Local Government Operations Protocol and the resulting report will provide a useful tool for each jurisdiction to evaluate and improve their operations relative to greenhouse gas emissions, as well as begin meeting state requirements. Program participants will also have free access to a software program, which will provide the participant with streamlined data collection and calculations of their inventory of emissions. Final greenhouse gas emissions reporting and presentations to each jurisdiction are scheduled to be completed during the first quarter of 2011.

Following completion of the greenhouse gas inventory for local government operations, (although dependent on program funding) the jurisdiction will be eligible to participate in the next phase of the program, the community wide greenhouse gas emissions inventory. The final phase (dependent on program funding) of the Green Communities program will culminate in the development of a Climate Action Plan.

For further information, please contact Nancy Richards or Christina Prestella at Sierra Business Council:

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Local Government Opportunity Greenhouse Gas Emissions Inventory for Local Government Operations Green Communities

Green Communities/Sierra Nevada is a collaboration between Pacific Gas and Electric Company ("PG&E") and Sierra Business Council dedicated to providing innovative energy efficiency and climate change solutions for local governments and communities in the Sierra Nevada within PG&E service areas. The Green Communities program is funded by California utility customers and administered by PG&E under the auspices of the California Public Utilities Commission.

BACKGROUND

Through the Green Communities Program (the "Program"), Sierra Business Council will assist local governments in the Sierra Nevada in meeting statewide goals for reducing greenhouse gas emissions. Growing awareness of the impacts of global warming on California communities along with state mandates has led to the need for climate action planning. Green Communities is a multi-phase program approved and overseen by the California Public Utilities Commission and administered by Pacific Gas and Electric Company (PG&E) using rate payer funds.

Energy Efficiency Goals

With a growing population and increasing demand for energy, California has set goals for reducing emissions related to the generation and use of energy and for reducing dependence on fossil fuels. In response to these goals, the California Public Utilities Commission has refocused ratepayer-funded energy efficiency programs on achieving a long-term transformation in the way Californians use energy. The California Energy Efficiency Strategic Plan (CEESP), adopted in 2008, sets forth a roadmap for energy efficiency in California through the year 2020 and beyond. One of the sectors addressed in the CEESP is Local Governments, which are envisioned to be leaders in using energy efficiency both in their own facilities and throughout their communities.

The CPUC has long-recognized the unique role of local governments in fostering innovation and has directed utilities to develop programs that take advantage of the expertise of local governments in promoting the pursuit of energy efficiency and the reduction of GHGE. Green Communities is a multiphase program. The first phase of the Program is to assist local governments to inventory greenhouse gas emissions from their municipal operations; subsequent phases, depending on funding, may include conducting community wide greenhouse gas emissions inventories and the development of Climate Action Plans. The first phase will be launched during the summer of 2010.

The Sierra Nevada and Green Communities

In the Sierra Nevada, the Green Communities program is serving 27 jurisdictions in PG&E service areas. Sierra Business Council has been engaged by PG&E to manage this program and to assist local government in building their capacity in influencing the energy attitudes and actions of their citizens.

Sierra Business Council recognizes that a fundamental change in energy efficiency is required for the Sierra Nevada to meet its energy, environmental and economic needs for the future, and is committed to working collaboratively with communities, local governments, businesses, the construction industry, utilities, and developing other partnerships to achieve both short and long term success in achieving a sustainable energy future for California.

The goals of the Program are to reduce energy consumption and greenhouse gas emissions in the Sierra Nevada, while promoting economic development, social fairness, and long-term environmental quality. The Sierra Business Council has set specific goals related to energy conservation in the region and seeks to address and

achieve these goals through a set of strategies that embrace and reinforce the broader sustainability objectives. In order to effectively transform energy consumption patterns, programs and activities must build the community support, political will, and labor and physical capacity to achieve full integration of clean energy technologies and maximize the variety of long-term opportunities and associated benefits as identified in the California Energy Efficiency Strategic Plan.

A goal of Sierra Business Council's energy programs is to engage Sierra Nevada municipal leadership in developing strategies aimed at a comprehensive and integrated energy infrastructure, maximizing the potential for clean energy. The Program simultaneously addresses climate change and energy efficiency. The funding is focused on climate change and the co-benefit is energy savings. The Program provides the opportunity to gather data and organize it to meet logistic and legal needs, using the California Air Resources Board (CARB) and California Climate Action Registry (CCAR) approved methodologies developed in part by ICLEI- Local Governments for Sustainability. It establishes a 2005 baseline for Greenhouse Gas Emissions by sector and quantifies energy used by sector. It gathers pertinent data in one place, processes it and generates a report which can be used to address the energy needs of the jurisdiction and its unique circumstances and levels of commitment and capacity in energy efficiency and climate action.

SYNOPSIS

Assistance to Local Governments

The Green Communities program will engage, train and assist local governments to prepare Greenhouse Gas emissions inventories for municipal operations (the "Program"). Specifically, the Program will offer a workshop series at no cost to selected participants. For eligibility criteria and selection process, please see the "Selection of Participants" section below. Program participants will be paired with trained interns to provide additional staffing needed to conduct data collection, analysis, and inventory development. Program participants will also have free access to a software program- hosted, maintained and provided by ICLEI, which will provide the participant with streamlined data collection and calculations of their inventory of emissions. The goal of the program is to provide each participant with a comprehensive Greenhouse Gas Inventory for their jurisdiction's municipal operations.

The Program may also offer training and resources for those participants that have already developed an inventory and need to update it.

Benefits to participating

Sierra Business Council has received funding to assist up to ten (10) local government jurisdictions in conducting a comprehensive Greenhouse Gas Emissions (GHGE) Inventory. The selected jurisdictions will receive (at no cost):

- Professional training for government staff, providing the resources and skills necessary to understand the sources of GHGEs and steps necessary to complete a Local Government Operations Protocol (LGOP) designed by ICLEI – Local Governments for Sustainability (ICLEI), and approved by the California Air Resources Board; to be used to quantify GHGEs for sources under operational control of local governments. These sources include buildings and other facilities, streetlights and traffic signals, water delivery facilities, airport facilities, vehicle fleet, transit fleet, power generation facilities, solid waste facilities, wastewater facilities and other process and fugitive emissions.
- A paid intern professionally trained to assist in the collection and processing of data, and the completion of the LGOP.
- A year 2005 baseline assessment of GHGE quantification by sources and sector of local government operations.
- A comprehensive GHGE inventory report.
- A presentation of the report and findings to officials and/or staff.

- Qualification to proceed with subsequent phases of the Green Communities program, with potential assistance with completion of a community wide greenhouse gas emissions inventory, and eventually a Climate Action Plan.

SBC, in partnership with PG&E and ICLEI will strive to provide each participant with each of these benefits to the best of their ability. If for some reason the team is unable to meet the objectives stated, SBC will work with the jurisdiction to describe what measures need to be taken to complete the program satisfactorily. Any comments or complaints on the program will be received by SBC, shared with PG&E and/or ICLEI, and resolved in a manner that satisfies the participant, to the extent that any of the partners are able to, without incurring additional costs or burden to the partner or the participant.

Qualification

In order to qualify for participation in the first phase of the Green Communities program, the local government must be located in the designated region (listed below), be a customer of PG&E, sign an agreement to participate in the program and to authorize release of data, designate a qualified staff member to participate in all or part of the training, assist the intern with data collection needs, and review the draft report.

• Designated Region

The designated region consists of all or portions of the following counties and cities

- Lassen
- Plumas
- Sierra
- Nevada County, Nevada City, Grass Valley
- Placer County, Colfax, Auburn, Rocklin, Loomis, Lincoln, Roseville
- El Dorado County, Placerville
- Alpine County
- Amador County, Amador City, Jackson, Ione, Sutter Creek, Plymouth
- Calaveras County, Angels Camp
- Tuolumne County, Sonora
- Mariposa

• Customer of PG&E

To be considered a customer of PG&E, the local government should receive a portion of its electricity and/or natural gas from PG&E. Emissions from sources not provided by PG&E will also be calculated, although PG&E will not fund these efforts.

• Staff of Local Government

A qualified local government staff member:

- Will have sufficient experience within the jurisdiction to identify sources of data (electricity consumption, stationary combustion, and fugitive emissions data) from the required emissions sectors owned and operated by the participating County/City.

Sectors include:

- Buildings and Other Facilities
- Streetlights and Traffic Signals
- Water Delivery Facilities
- Wastewater Facilities
- Port and Airport Facilities
- Vehicle and Transit Fleet
- Power Generation Facilities

- Solid Waste Facilities
- Other Process and Fugitive Emissions
- Employee Commutes
- Government Generated Solid Waste
- Contracted Services
- Will facilitate the intern's gathering of the data.
- Will assist the intern in accessing and gathering the data in a timely manner
- Will attend an initial in-person group training in or near Sacramento plus consider attending up to 3 additional in-person group training sessions and up to 3 webinar based trainings between September 2010 and January 2011. (A schedule will be developed to try to accommodate all participants' schedules.)
- Will to review the draft report for accuracy and suggested revisions to language, taking into consideration the unique considerations for the jurisdiction.

SELECTION CRITERIA

Local Governments

All qualified local government should consider participation in the Green Communities program. Sierra Business Council is funded to assist a maximum of 10 local governments in the Sierra Nevada in the first phase, and is currently reaching out to local government staff and officials through materials, phone calls, and meetings plus a survey developed by the partners in the program. In addition to the Sierra Nevada, the other partners are the Association of Bay Area Governments and the Great Valley Center. The Program is modeled on a pilot conducted Fall of 2009 by the Association of Monterey Bay Area Governments, another partner who is entering the second phase of the Program. The selection of the ten (10) Sierra Nevada local governments will be at the sole discretion of Sierra Business Council and will be based, in part, on a timely response to solicitation, level of interest, and local government staff capacity and other criteria.

Interns

Sierra Business Council is currently in the process of hiring qualified interns to assist local governments in completing the greenhouse gas emissions inventory for local government operations. The Interns will be trained in the Local Government Operations Protocol, the tool used to process the data and generate the draft report. The interns will have sufficient background to understand and use the tool and to work efficiently and effectively with local government staff. Each local government participant will be paired with one lead intern.



Green Communities Program
Rationale for proactive efforts to complete a Local Government Operations
Greenhouse Gas Emission Inventory

Overview

Local governments often have broad influence and exclusive authority over many activities that contribute significant impacts on energy usage related to operations throughout their jurisdictions. Reductions in energy usage could potentially save American taxpayers millions of dollars each year. By adopting cost-effective strategies related to improving energy efficiency of municipal facilities and operations, local governments provide ways to reduce costs, stimulate the local economy, meanwhile reducing emissions of greenhouse gases.

California's record of entrepreneurial success and forward thinking on current issues has provided the platform necessary to foster strategic planning, innovative thinking, and early action related to the imminent need for reduced per capita energy consumption. The State of California has taken a proactive role in responding to issues related to mitigating the impacts of changes in climate through the development of several policies, regulations and recommendations for reductions in greenhouse gas emissions (GHGE) on a large scale. California has begun scoping a plan which places some focus on emissions resulting from local government operations¹. By starting at the local government level, the State is developing a model to learn from; a model which could eventually be studied and implemented by other cities, counties, states, and countries on a large scale basis.

Planning for implementation of these policies has already begun, providing ample time for local governments to act early and begin preparing to comply with such policies. There are also many financial incentives available to local governments interested in beginning the process now, some of which Sierra Business Council has access to and has the necessary resources available to assist interested participants through the process of monitoring GHGEs related to local government operations.

Regulatory compliance

When implemented, the Global Warming Solutions Act of 2006 (also known as Assembly Bill 32 or AB 32) will carry several policies forward which affect local government activities. AB 32 has set a goal for local governments to reduce GHGEs by 15% by 2020.² By acting now and realizing the reductions already achieved from recent retrofits, facility changes, and reduction in staff due to budgetary limitations, local governments can show early action related to upcoming legislation. By doing its baseline inventory now, the jurisdiction will also be better positioned to claim any improvements from here forward as emissions reduction under any new regulations.

The State Attorney General's office has also recommended that local governments begin to address climate change at the project level³, providing the opportunity for local governments to become leaders in ensuring that sustainability is considered at the earliest stages of project development. By taking this early action approach, local governments are more in line to shape private development in the long term as they will possess the data, skills, and resources necessary to analyze impacts and develop requirements for feasible changes or alternatives

¹ <http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm>

² <http://www.arb.ca.gov/cc/ab32/ab32.htm>

³ http://www.ag.ca.gov/globalwarming/pdf/GW_mitigation_measures.pdf



which substantially lessen the impacts on the atmosphere. GHGE inventories will help with the CEQA analysis, while also demonstrating that the jurisdiction is making a good faith effort to evaluate and mitigate impacts on the climate from planned development. The Attorney General's office and the Office of Planning and Research have made it clear that this type of analysis is required, as evidenced by the San Bernardino County litigation⁴. With the passage of Senate Bill 97 in 2007 (Public Resources Code, § 21083.05)⁵, and the 2010 CEQA Guidelines Update⁶, it appears as though there is no longer any dispute that climate change is an environmental impact within the scope of CEQA.

By working with the Local Government Operations Protocol⁷ (developed by ICLEI- Local Governments for Sustainability, the California Air Resources Board, and the California Climate Action Reserve) local governments will gain knowledge in the principles, approach, methodology, and procedures needed to develop a local government operations greenhouse gas inventory. These inventories will be developed using standards that are consistent, comparable, transparent, and recognized nationally, ultimately enabling the measurement of emissions over time.

General Plan Updates

Many local governments have begun to recognize the benefits of addressing greenhouse gas emissions during the general plan update at the programmatic or "big picture" level. More and more, cities and counties are creating "Climate Action Plans" and "Sustainability Plans" that reduce community-wide emissions through a broad range of integrated goals, objectives, policies and implementation measures.

Under California law, cities and counties are required to prepare a general plan and to update it regularly. General plans are in the nature of a "constitution" for development, shaping the community for decades to come. Because general plan updates are "projects" under the California Environmental Quality Act (CEQA), and because updates may have significant impacts, a local government updating its general plan usually is required to prepare an Environmental Impact Report (EIR).

Under CEQA, lead agencies must consider not only the short-term impacts of the decisions we make today, but also the potential for those decisions to affect the quality of life of our children and grandchildren. "The maintenance of a quality environment for the people of this state *now and in the future* is a matter of statewide concern." (Pub. Res. Code, § 21000, subd. (c).)(emphasis added).⁸ Simply permitting "business as usual" land use and development is not sustainable.

The update process and the accompanying EIR provide a significant opportunity for local governments to consider long-term sustainability. In some communities, the long-term sustainability of water supplies may be particularly important, especially in our changing climate. In others, there may be a desire to maintain a sustainable agriculture industry, or to create a sustainable forest products industry based on smaller diameter timber and biomass. Every community, however, has an obligation to consider how its general plan update may affect its community-wide greenhouse gas emissions and their cumulative impacts, and to take affirmative,

⁴ http://ag.ca.gov/cms_pdfs/press/2007-08-21_San_Bernardino_settlement_agreement.pdf

⁵ http://www.climatechange.ca.gov/publications/legislation/SB_97_bill_20070824_chaptered.pdf

⁶ <http://ceres.ca.gov/ceqa/guidelines/>

⁷ <http://www.icleiusa.org/programs/climate/ghg-protocol>

⁸ <http://www.ag.ca.gov/globalwarming/ceqa/generalplans.php>



decisive action to reduce and control these emissions. As the Air Resources Board has stated, “local governments are ‘essential partners’ in achieving California’s goals to reduce greenhouse gas emissions. They have broad influence and, in some cases, exclusive authority over activities that contribute to significant direct and indirect greenhouse gas emissions through their planning and permitting processes, local ordinances, outreach and education efforts, and municipal operations.”⁹

Greenhouse Gas Emissions Reduction Plans

Addressing cumulative impacts at the programmatic, general plan level - provided it’s done right - allows for the streamlined CEQA review of individual projects. Where emissions are adequately addressed at the plan level, a lead agency may determine that projects that are consistent with the plan will not have significant greenhouse gas-related impacts.

In its March 2009 CEQA Guidelines update, the Resources Agency added a new provision, Section 15183.5¹⁰, which provides a framework for programmatic greenhouse gas emissions reduction plans. An adequate plan must:

- Quantify existing and projected community-wide greenhouse gas emissions;
- Establish greenhouse gas emissions targets over the life of the plan which, if achieved, would render the community’s greenhouse gas emissions to be less than significant;
- Identify and analyze the greenhouse gas emissions resulting sources in the community;
- Identify a suite of specific, enforceable measures that, collectively, will achieve the emissions targets;
- Establish a mechanism to monitor the plan’s progress and to require amendment if the plan is falling short;
- Be adopted in a public process following environmental review.

Fiscal Incentives

Emissions inventories help to identify opportunities for energy savings and related operational cost savings. An end product of the inventory process is a “Master Data Workbook” containing all of the energy data from local government operations for a chosen year. A GHGE inventory can be viewed as an energy audit tool, pointing out where utility usage is highest; therefore a GHGE inventory is directly related to outflow of government funds. Jurisdictions can use this information to analyze and understand operational inefficiencies, providing a metric for gaining efficiency and lowering energy related costs across the board.

Sierra Business Council (SBC) has been contracted to manage several of Pacific Gas and Electric Company’s (PG&E)’s energy efficiency programs throughout the Sierra Nevada. Not only does participation in the first phase of Green Communities allow a jurisdiction to become eligible for future phases (community-wide inventory, and Climate Action Plan), but it could lead to other opportunities, including participation in the Sierra Nevada Energy Watch (audit and retrofit program) and the Innovator Pilot Project (workforce training for

⁹ <http://www.arb.ca.gov/cc/localgovernment/localgovernment.htm>

¹⁰ <http://ceres.ca.gov/ceqa/docs/>



operators and minorities) as well as receiving assistance with Energy section updates in their general plan (a goal of the California Energy Efficiency Strategic Plan). For more information on these programs, please contact the Green Communities Program Manager.

As mentioned, this opportunity results from the first phase of funding from the California Public Utilities Commission to PG&E. Subsequent phases potentially include community wide inventories and eventually a Climate Action Plan. Jurisdictions could expect to pay consultant fees for a greenhouse gas emissions inventory, with additional costs for analysis and development of the reports and strategic planning. These services are available at no cost by participating in the Green Communities program. By choosing to participate, the local government can mitigate the risk of incurring these costs if inventories become a requirement of the State Attorney General or future legislation.

By taking this early action step to reducing their energy usage while quantifying their impacts on the atmosphere, jurisdictions are finding new opportunities for federal and state grant funding. There are many financial resources available to local governments related to climate action planning, energy efficiency and conservation, technical assistance, renewables funding, as well as access to financing and low interest loans, rebate programs, assistance programs, federal tax incentives, and utility incentives¹¹. Participation in the Green Communities could be used as a match for many of these programs and other offered to local governments in the future¹².

Climate Change

According to the California Office of the Attorney General, global warming and disruptive climate change pose great risks for California. Climate change will result in more frequent and more intense forest fires, more air pollution and deadly heat waves, a significant reduction in the snowpack and state water supplies, sea level rise and erosion along California's long coastline, as well as billions of dollars in damage to our agricultural, tourism, recreation, and other industries¹³. By taking the proactive steps to calculating, reducing, and monitoring GHGE reductions in the near future, local governments can reduce potential costs to the state and their jurisdictions, as well as the environment.

¹¹ <http://www.coolcalifornia.org/article/financial-resources>

¹² http://www.sgc.ca.gov/docs/funding/2010_04_22_Planning_Grant_Guidelines- FINAL_REVISED.pdf

¹³ <http://www.ag.ca.gov/globalwarming/>

RESOLUTION NO. 10-_____

A RESOLUTION AUTHORIZING PARTICIPATION IN THE GREEN COMMUNITIES
PROGRAM OFFERED BY THE SIERRA BUSINESS COUNCIL

WHEREAS, the Sierra Business Council proposes to arrange for professional training and support to assist the City of Auburn in quantifying greenhouse gas emissions of City facilities and operations, and

WHEREAS, the Sierra Business Council's work is supported by the Pacific Gas and Electric Company's Green Communities Program, a program funded by California utility customers and administered by PG&E under the auspices of the California Public Utility Commission, and

WHEREAS, participation in the Green Communities Program will provide the City of Auburn with the opportunity to develop greenhouse gas emissions inventories, establish a baseline and track progress and thereby undertake an analysis of its greenhouse gas emissions at minimal cost and commitment of staff resources, and

WHEREAS, the City of Auburn desires to participate in the Green Communities Program on the terms and conditions as set forth in the attached Green Communities Participation Agreement,

NOW THEREFORE BE IT RESOLVED by the City Council of the City of Auburn:

The City Council of the City of Auburn hereby authorizes the Community Development Director to sign a Participation Agreement for the Green Communities Program administered by the Sierra Business Council.

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DATED: October 11, 2010

Bridget Powers, Mayor

ATTEST:

Joseph G. R. Labrie, City Clerk

I, Joseph G. R. Labrie, City Clerk of the City of Auburn, hereby certify that the foregoing resolution was duly passed at a regular meeting of the City of Auburn held on October 11, 2010 by the following vote on roll call:

Ayes:

Noes:

Absent:

Joseph G. R. Labrie, City Clerk



City of Auburn

2005 Government Operations Greenhouse Gas Emissions Inventory

Narrative Report

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Developed by Sierra Business Council

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Sustainability USA

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Executive Summary

The Purpose of Conducting an Inventory

Each day, local governments operate buildings, vehicle fleets, street lights, traffic signals, water systems, and wastewater plants; local government employees consume resources commuting to work and generate solid waste which is sent for disposal. All of these activities directly or indirectly cause the release of carbon dioxide and other greenhouse gases into the atmosphere. This report presents the findings and methodology of a local government operations (LGO) greenhouse gas emissions inventory for the City of Auburn. The inventory measures the greenhouse gas emissions resulting specifically from the City's government operations, arranged by sector to facilitate detailed analysis of emissions sources. The inventory addresses where and what quantity of emissions are generated through various local government activities. Through analysis of a local government's emissions profile, the City of Auburn can tailor strategies to achieve the most effective greenhouse gas emission reductions.

Strategies by which local governments can significantly reduce emissions from their operations include increasing energy efficiency in facilities and vehicle fleets, utilizing renewable energy sources, reducing waste, and supporting alternative modes of transportation for employees. The benefits of these actions include lower energy bills, improved air quality, and more efficient government operations, in addition to the mitigation of local and global climate change impacts. By striving to save taxpayer money through efficient government operations, the City of Auburn is working to improve government services in a smart and targeted way that will benefit all of the City's residents.

This inventory can be used by the City of Auburn to potentially limit future impacts, make government operations more efficient, and improve the level of service it offers to the residents of Auburn.

Local Government Overview

The City of Auburn is located at the crossroads of I-80 and Highway 49. It encompasses approximately 7.5 square miles and is situated at elevations ranging from 1,000 to 1,400 feet. Auburn is the county seat of Placer County and had a population in 2005 of 12,500. The City's municipal operations utilize electricity and natural gas distributed by Pacific Gas and Electricity Company (PG&E). It is located in U.S. Department of Energy climate zone number 3B which is defined as a prevailing warm and dry climate. A hot-dry climate is generally defined as a region that receives less than 20 in. (50 cm) of annual precipitation and where the monthly average outdoor temperature remains above 45°F (7°C) throughout the year.

Inventory Results

The following figures summarize the results of the LGO greenhouse gas emissions inventory for the City of Auburn, by sector and source. All emissions are defined in terms of carbon dioxide equivalent (CO₂e), and the method of which is used to standardize emissions is describe in full detail in the Introduction section of the following inventory report. As shown in Figure 1, the vehicle fleet (37%) and the wastewater treatment plant (23%) are the two largest sectors of the City of Auburn's emissions. As shown in Figure 3, natural gas (52%) and electricity (32%) are the two largest contributors of greenhouse gas emissions. Table 1, summarizes the breakdown of emissions by scope. Information items included in this table reflect emissions resulting from PG&E owned streetlights. For more detail on the concepts of scopes, sources, and sectors, and to review more granular data produced through the inventory study, please refer to the full report on the following pages.

Figure 1: 2005 Government Operations CO₂e Emissions by Sector

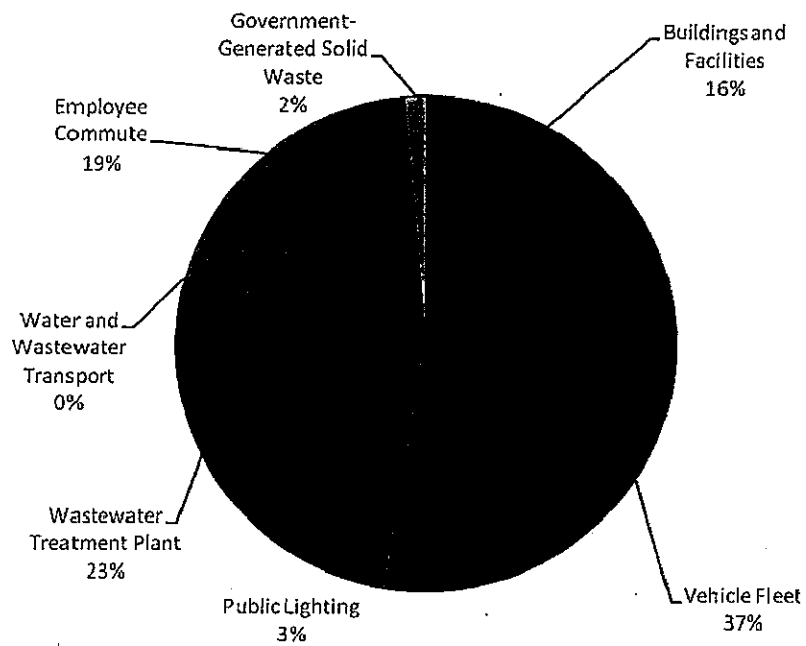


Figure 2: 2005 Government Operations CO₂e Emissions by Source

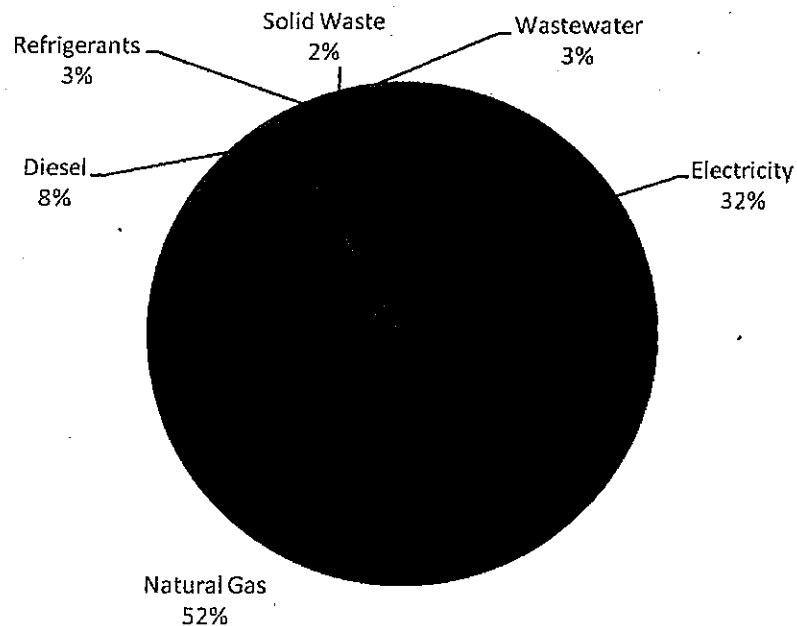


Table 1: LGO Protocol Report - Overall Emissions by Scope

Total Emissions				
	CO ₂ e	CO ₂	CH ₄	N ₂ O
Scope 1	735.21	618.04	0.09	0.20
Scope 2	483.10	479.14	0.03	0.01
Scope 3	317.32	288.53	1.09	0.02
INFORMATION ITEMS	99	98	6	2

Regional and Local Context

Climate Change Mitigation Activities in California

Since 2005, the State of California has responded to growing concerns over the effects of climate change by adopting a comprehensive approach to addressing emissions in the public and private sectors. This approach was officially initiated with the passage of the Global Warming Solutions Act of 2006 (AB 32), which requires the state to reduce its greenhouse gas emissions to 1990 levels by 2020. The AB 32 Scoping Plan was developed to identify strategies for meeting the AB 32 goal, and was adopted by the California Air Resources Board (ARB) in December 2008. Among many other strategies, it encourages local governments to reduce emissions in their jurisdictions by 15 percent below baseline levels by 2020.

In addition, it identifies the following strategies that will impact local governance:

- Expand energy efficiency programs
- Establish and seek to achieve reduction targets for transportation-related GHG emissions
- Expand the use of green building practices
- Increase waste diversion, composting, and commercial recycling toward zero-waste
- Continue water efficiency programs and use cleaner energy sources to move and treat water
- Reduce methane emissions at landfills
- Preserve forests that sequester carbon dioxide

Other measures taken by the state include mandating stronger vehicle emissions standards (AB 1493, 2002), establishing a low-carbon fuel standard (EO # S-01-07, 2007), mandating a climate adaptation plan for the state (S-EO # 13-08, 2008), establishing a Green Collar Job Council, and establishing a renewable energy portfolio standard for power generation or purchase in the state. The state also has made a number of legislative and regulatory changes that have significant implications for local governments:

- SB 97 (2007) required the Office of Planning and Research to create greenhouse gas planning guidelines for the California Environmental Quality Act (CEQA). In addition, ARB is tasked with creating energy-use

and transportation thresholds in CEQA reviews, which may require local governments to account for greenhouse gas emissions when reviewing project applications.

- AB 811 (2007) authorizes all local governments in California to establish special districts that can be used to finance solar or other renewable energy improvements to homes and businesses in their jurisdiction.
- SB 375 (2008) revises the process of regional transportation planning by metropolitan planning organizations (MPOs), which are governed by elected officials from local jurisdictions. The statute calls on ARB to establish regional transportation-related greenhouse gas targets and requires the large MPOs to develop regional "Sustainable Communities Strategies" of land use, housing and transportation policies that will move the region towards its GHG target. The statute stipulates that transportation investments must be consistent with the Sustainable Communities Strategy and provides CEQA streamlining for local development projects that are consistent with the Strategy.

Pacific Gas and Electric Company-Sponsored Inventory Project

Through the generous support of the Pacific Gas and Electric Company (PG&E), ICLEI - Local Governments for Sustainability was contracted to work with Sierra Business Council to assist in the quantification of greenhouse gas emissions in the City of Auburn and the following other participating communities: Placer County, Nevada County, Sierra County, Alpine County, Plumas County, City of Lincoln, Placerville, Town of Loomis, City of Jackson, Sutter Creek, Plymouth, City of Ione, Amador City, Grass Valley and Nevada City. ICLEI is a nonprofit association of local governments that provides information, delivers training resources, organizes conferences, facilitates networking and city-to-city exchanges, carries out research and pilot projects, and offers technical services and consultancy related to climate planning. Throughout 2010, ICLEI provided training and technical assistance to participating regional organizations, interns, and local government staff and facilitated the completion of this report.

Climate Change Mitigation Activities in the City of Auburn

Since 2005, the City of Auburn has taken great strides in the mitigation of their greenhouse gas emissions. Specifically, they have:

- Installed a Slow Fill CNG Fueling Station at the Corporation Yard
- Installed a Photovoltaic System at the Wastewater Treatment Plant
- Purchased Hybrid Pool Cars
- Installed Energy Efficient Lights at City Hall

The use of compressed natural gas as a fuel reduces vehicular exhaust emissions significantly. Carbon dioxide emissions, specifically, can be reduced up to 10 percent. The City provides transit services using three CNG powered buses. The

installation of the CNG fueling station has allowed the city to continue this energy viable alternative to traditional fuel energy use.

Recent upgrades to the City's wastewater treatment plant have resulted in the reduction of both energy and effluent nitrogen levels. The improvements include the addition of a third secondary clarifier and replacement of the chlorine disinfection system with an ultraviolet light disinfection system. A 680 kilowatt solar photovoltaic system, which generates over 1,000,000 kWh of clean solar energy every year, provides the electricity needed to power the plant's electrical needs.

Hybrid vehicles use less fuel and produce fewer emissions than their counterparts. Since 2005, the City has purchased hybrid vehicles for use by their employees.

Introduction

General Methodology

Local Government Operations Protocol

A national standard called the Local Government Operations Protocol (LGO Protocol) has been developed and adopted by the California Air Resources Board (ARB) in conjunction with ICLEI, the California Climate Action Registry, and The Climate Registry. This standard provides accounting principles, boundaries, quantification methods, and procedures for reporting greenhouse gas emissions from local government operations. The LGO Protocol forms the basis of ICLEI's Clean Air & Climate Protection Software (CACP 2009), which allows local governments to compile data and perform the emissions calculations using standardized methods.

Greenhouse Gases and Carbon Dioxide Equivalent

In accordance with LGO Protocol recommendations, CACP 2009 calculates and reports all six internationally recognized greenhouse gases regulated under the Kyoto Protocol (Carbon Dioxide, Methane, Nitrous Oxide, Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride). Emissions summaries found throughout this report also use CACP 2009's ability to combine emissions from the various greenhouse gases into carbon dioxide equivalent, CO₂e. Since equal quantities of each greenhouse gas have more or less influence on the greenhouse effect, converting all emissions to a standard metric, CO₂e, allows apples-to-apples comparisons amongst quantities of all six emissions types. Greenhouse gas emissions are reported in this inventory as metric tons of CO₂e (MTCO₂e).

Table 2 exhibits the greenhouse gases and their global warming potential (GWP), a measure of the amount of warming a greenhouse gas may cause compared to the amount of warming caused by carbon dioxide.

Table 2: Greenhouse Gases

Gas	Chemical Formula	Activity	Global Warming Potential (CO ₂ e)
Carbon Dioxide	CO ₂	Combustion	1
Methane	CH ₄	Combustion, Anaerobic Decomposition of Organic Waste (Landfills, Wastewater), Fuel Handling	21
Nitrous Oxide	N ₂ O	Combustion, Wastewater Treatment	310
Hydrofluorocarbons	Various	Leaked Refrigerants, Fire Suppressants	12–11,700
Perfluorocarbons	Various	Aluminum Production, Semiconductor Manufacturing, HVAC Equipment Manufacturing	6,500–9,200
Sulfur Hexafluoride	SF ₆	Transmission and Distribution of Power	23,900

Calculating Emissions

In general, emissions can be quantified in two ways.

1. **Measurement-based methodologies** refer to the direct measurement of greenhouse gas emissions from a monitoring system. Emissions measured this way may include those emitted from a flue of a power plant, wastewater treatment plant, landfill, or industrial facility. This method is the most accurate way of inventorying emissions from a given source, but is generally available for only a few sources of emissions.
2. **Calculation-based methodologies** refer to an estimate of emissions calculated based upon measurable *activity data* and *emission factors*. Table 3 provides examples of common emissions calculations.

Table 3: Basic Emissions Calculations

Activity Data	x	Emissions Factor	= Emissions
Electricity Consumption (kilowatt hours)		CO ₂ emitted/kWh	CO ₂ emitted
Natural Gas Consumption (therms)		CO ₂ emitted/therm	CO ₂ emitted
Gasoline/Diesel Consumption (gallons)		CO ₂ emitted /gallon	CO ₂ emitted
Waste Generated by Government Operations (tons)		CH ₄ emitted/ton of waste	CH ₄ emitted

The Scopes Framework

This inventory reports greenhouse gas emissions by sector and additionally by “scope”, in line with the LGO Protocol and WRI/WBCSD GHG Protocol Corporate Standard.

Scope 1: Direct emissions from sources within a local government’s operations that it owns and/or controls, with the exception of direct CO₂ emissions from biogenic sources. This includes stationary combustion to produce electricity, steam, heat, and power equipment; mobile combustion of fuels; process emissions from physical or chemical processing; fugitive emissions that result from production, processing, transmission, storage and use of fuels; leaked refrigerants; and other sources.

Scope 2: Indirect emissions associated with the consumption of purchased or acquired electricity, steam, heating, or cooling.

Scope 3: All other emissions sources that hold policy relevance to the local government that can be measured and reported. This includes all indirect emissions not covered in Scope 2 that occur as a result of activities within the operations of the local government. Scope 3 emission sources include (but are not limited to) tailpipe emissions from employee commutes, employee business travel, and emissions resulting from the decomposition of government-generated solid waste.

ICLEI and the LGO Protocol provide standard methodologies for calculating emissions from the sources shown in the following table. Other sources of emissions, such as those associated with the production of consumed products do not yet have standard calculation methodologies and are thus excluded from this inventory.

Table 4: Inventoried Emissions Sources by Scope

Scope 1	Scope 2	Scope 3
Fuel consumed by facilities	Purchased electricity consumed by facilities	Solid waste generated by government operations
Fuel consumed by vehicle fleet and mobile equipment	Purchased electricity consumed by electric vehicles	Fuel consumed by vehicles during employee commuting
Fuel consumed to generate electricity	Purchased steam	
Leaked refrigerants from facilities and vehicles	Purchased cooling (chilled water)	
Leaked / deployed fire suppressants		
Solid waste in government landfills		
Wastewater decomposition and treatment at a municipal wastewater treatment plant		

Organizational Boundaries

The organizational boundary for the inventory determines which aspects of operations are included in the emissions inventory, and which are not. Under the LGO Protocol, two control approaches are used for reporting emissions: operational control or financial control. A local government has operational control over an operation if it has full authority to introduce and implement policies that impact the operation. A local government has financial control if the operation is fully consolidated in financial accounts. If a local government has joint control over an operation, the contractual agreement will have to be examined to see who has authority over operating policies and implementation, and thus the responsibility to report emissions under operational control.

LGO Protocol strongly encourages local governments to utilize operational control as the organization boundary for a government operations emissions inventory. Operational control is believed to most accurately represent the emissions sources that local governments can most directly influence, and this boundary is consistent with other environmental and air quality reporting program requirements. For this reason, this inventory was conducted according to the operational control framework.

Types of Emissions

As described in the LGO Protocol, emissions from each of the greenhouse gases can come in a number of forms:

Stationary or mobile combustion: These are emissions resulting from on-site combustion of fuels (natural gas, diesel, gasoline, etc.) to generate heat, electricity, or to power vehicles and mobile equipment.

Purchased electricity: These are emissions produced by the generation of power from utilities outside of the jurisdiction.

Fugitive emissions: Emissions that result from the unintentional release of greenhouse gases into the atmosphere (e.g., leaked refrigerants, methane from waste decomposition, etc.).

Process emissions: Emissions from physical or chemical processing of a material (e.g., wastewater treatment).

Significance Thresholds

Within any local government's own operations there will be emission sources that fall within Scope 1 and Scope 2 that are minimal in magnitude and difficult to accurately measure. Within the context of local government operations, emissions from leaked refrigerants and backup generators may be common sources of these types of emissions. For these less significant emissions sources, LGO Protocol specifies that up to 5 percent of total emissions can be reported using methodologies that deviate from the recommended methodologies in LGO Protocol. In the context of registering emissions with an independent registry (such as the California Climate Action Registry), emissions that fall under the significance threshold are called *de minimis*.

In this report, the following emissions fell under the significance threshold and were reported using best available methods:

- Scope 1 fugitive emissions from leaked refrigerants from HV/AC and refrigeration equipment
- Scope 1 fugitive emissions from leaked/deployed fire suppressants
- Scope 1 CH₄ and N₂O emissions from vehicle fleet
- Scope 1 fugitive emissions from backup generators and off-road equipment

Information Items

Information items are emissions sources that are not included as Scope 1, 2, or 3 emissions in the inventory, but are reported here separately in order to provide a more complete picture of emissions from the City of Auburn's government operations.

A common emission that is categorized as an information item is carbon dioxide emitted in the combustion of biogenic fuels. Local governments will often burn fuels that are of biogenic origin (wood, landfill gas, organic solid waste, biofuels, etc.) to generate power. Common sources of biogenic emissions are the combustion of landfill gas from landfills or biogas from wastewater treatment plants, as well as the incineration of organic municipal solid waste at incinerators.

Carbon dioxide emissions from the combustion of biogenic fuels are not included in Scope 1 based on established international principles. Methane and nitrous oxide emissions from biogenic fuels are considered Scope 1 stationary

combustion emissions and are included in the stationary combustion sections for the appropriate facilities. These principles indicate that biogenic fuels (e.g., wood, biodiesel), if left to decompose in the natural environment, would release CO₂ into the atmosphere, where it would then enter back into the natural carbon cycle. Therefore, when wood or another biogenic fuel is combusted, the resulting CO₂ emissions are akin to natural emissions and should therefore not be considered as human activity-generated emissions. The CH₄ and N₂O emissions, however, would not have occurred naturally and are therefore included as Scope 1 emissions.

Information items quantified for this inventory include:

- Scope 2 emissions from electricity used for LS-1 designated streetlights (PG&E owned, operated, maintained and directly paid for, indirectly paid for through the City of Auburn's general rate case with PG&E)

Although R-22 was being used in some of the HV/AC equipment in 2005, it was not quantified and included in the inventory, nor included as an information item, due to its being phased out as an ozone depleting substance under the terms of the Montreal Protocol.

Understanding Totals

It is important to realize that the totals and sub-totals listed in the tables and discussed in this report are intended to represent all-inclusive, complete totals for the City of Auburn's operations. However, these totals are only a summation of inventoried emissions using available estimation methods. Each inventoried sector may have additional emissions sources associated with them that were unaccounted for, such as Scope 3 sources that could not be estimated.

Also, local governments provide different services to their citizens, and the scale of the services (and thus the emissions) is highly dependent upon the size and purview of the local government. For these reasons, comparisons between local government totals should not be made without keen analysis of the basis for figures and the services provided.

It is important to understand that in the case where a local government operates a municipal utility that generates electricity for government facilities, the associated emissions should be considered Scope 1 emissions within the Power Generation Facilities sector, and not Scope 2 emissions within each of the other facilities sectors, when calculating a total. This is advised by the LGO Protocol and done to avoid reporting the same emissions twice, also known as double counting.

Inventory Results

Emissions Total

In 2005, the City of Auburn's greenhouse gas emissions from government operations totaled 1,535.62 metric tons of carbon dioxide equivalent (CO₂e). This number represents a roll-up of emissions, and is not intended to represent a complete picture of emissions from the City's operations. This roll-up number was calculated specifically to avoid double counting. Refer to the Understanding Totals section of this report's Introduction for more information on calculating totals and avoiding double counting.

Buildings and Other Facilities

Facility operations contribute to greenhouse gas emissions in two major ways. First, facilities consume electricity and fuels such as natural gas. This consumption is associated with the majority of greenhouse gas emissions from facilities. In addition, fire suppression, air conditioning, and refrigeration equipment in buildings can emit hydrofluorocarbons (HFCs) and other greenhouse gases when these systems leak refrigerants or fire suppressants. Refrigerants and fire suppressants are very potent greenhouse gases, and have Global Warming Potential (GWP) of up to many thousand times that of CO₂. For example, HFC-134a, a very common refrigerant, has a GWP of 1300, or 1300 times that of CO₂. Therefore, even small amounts of leaked refrigerants can have a significant effect on greenhouse gas emissions.

For the purpose of this narrative, the City of Auburn operates six facilities: the Civic Center, Martin Park Fire Station, Gietzen Fire Station, Maidu Fire Station, a police station, and the corporation yard. Although technically considered facilities, for emissions purposes, the Auburn Municipal Airport and the wastewater treatment plant are categorized individually.

The Martin Park and Maidu Fire Stations are support stations only and are not operated daily. The Civic Center and corporation yard are operated on weekdays during normal business hours. The Gietzen Fire Station and the police station are both manned 24 hours, seven days a week. As expected, due to regular operating hours, the majority of emissions in the buildings and facilities sector are attributed to the Civic Center (31%), the police station (30%) and the fire stations (28%), shown in Figure 3 and Table 5. Figure 4 and Table 6 summarize the breakdown of greenhouse gas emission by source, showing that electricity (43%) and natural gas (42%) consumption are the largest contributors to CO₂ emissions. Table 7 provides insight on the top five largest contributors to emissions from the building sector, and can be used to better understand which facilities had the highest energy consumption and related emissions in 2005.

Table 8 outlines emission by scope and breaks down emissions into the four components of greenhouse gases used to calculate CO₂e.

Figure 3: Buildings and Other Facilities Emissions by Location

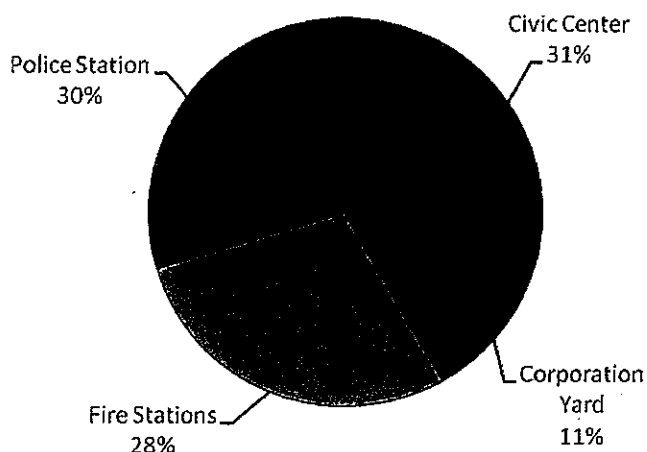


Table 5: Buildings and Other Facilities Emissions by Location

Location	Metric Tons CO ₂ e
General Government Buildings	66.54
Public Works	23.20
Fire	61.49
Police	64.02
Totals	215.24

Figure 4: Buildings and Other Facilities Emissions by Source

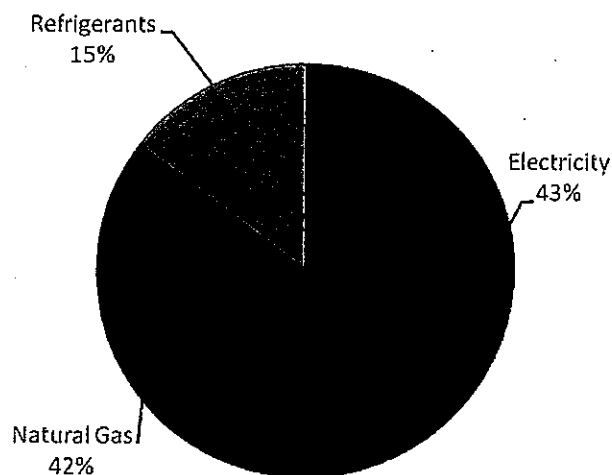


Table 6: Buildings and Other Facilities Emissions by Source

Source	Metric Tons CO ₂ e
Electricity	92.65
Natural Gas	91.06
Refrigerants	31.54
Totals	215.25

Table 7: Top 5 Largest Contributors to Emissions from Buildings Sector

Facility	% of Sector Emissions from Electricity	% of Sector Emissions from Natural Gas	% of Sector Emissions from Other Sources	CO ₂ e Emissions from Electricity	CO ₂ e Emissions from Natural Gas	CO ₂ e Emissions from Other Sources	Total CO ₂ e Emissions
Civic Center	14%	10%	8%	28.73	21.05	16.71	66.54
Police Station	20%	7%	5%	40.16	14.07	9.79	64.02
Gietzen Fire Station	4%	10%	1%	8.71	10.93	2.52	31.16
Corporation Yard	4%	6%	1%	8.55	12.15	2.51	23.20
Martin Park Fire Station	3%	7%	0%	5.15	15.19	0.00	20.35
Totals	45%	40%	15%	91.35	82.39	31.53	205.26

Table 8: LGO Protocol Report - Buildings Sector Emissions by Scope and Emission Type

BUILDINGS & OTHER FACILITIES					
Scope	Emission Type	Greenhouse Gas Emissions (metric tons)			
SCOPE 1		CO ₂ e	CO ₂	CH ₄	N ₂ O
	Stationary Combustion	91.056	90.823	0.009	0.000
	Fugitive Emissions	31.538	0.000	0.000	0.000
	Total Direct Emissions	122.594	90.823	0.009	0.000
SCOPE 2		CO ₂ e	CO ₂	CH ₄	N ₂ O
	Purchased Electricity	92.653	91.894	0.006	0.002
	Total Indirect Emissions	92.653	91.894	0.006	0.002

Streetlights, Traffic Signals, and Other Public Lighting

Like most local governments, the City of Auburn operates a range of public lighting including traffic/signal lighting, street lighting, park lighting, lighting for public restrooms, etc. All emissions associated with the operation of this infrastructure are due to electricity consumption (52.9 tons CO₂e). Figure 6 shows that Streetlights account for the highest percentage of emissions (50%) with the other half resulting from Traffic Signals/Controllers (30%) and Other Outdoor Lighting (20%). Table 9 outlines emissions by scope, also addressing emissions resulting from information

items. In this Table, information items refer to public lighting that is owned, operated, maintained and paid for directly by PG&E. The City of Auburn indirectly pays for these items through the general rate case with PG&E. Data relating to electricity consumption for public lighting was obtained from PG&E.

Figure 5: Public Lighting Emissions by Subsector

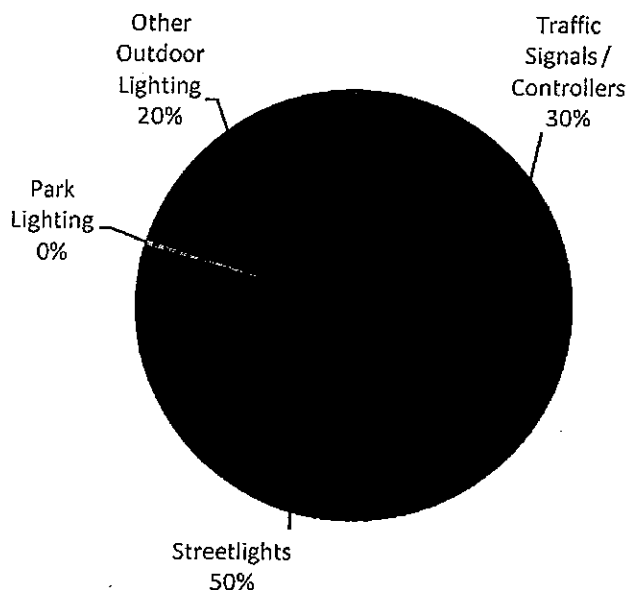


Table 9: Public Lighting Emissions by Subsector

Subsector (Light Type)	metric tons CO ₂ e	% of Sector Emissions	Electricity Use (kWh)	Cost (\$)
Traffic Signals / Controllers	15.73	30%	70,303	\$11,686
Streetlights	26.29	50%	117,526	\$13,667
Park Lighting	0.23	0%	1,171	\$245
Other Outdoor Lighting	10.61	20%	47,443	\$6,880
Totals	52.90	100%	236,443	\$32,478

Table 10: LGO Protocol Report – Public Lighting Emissions by Scope and Emission Type

STREETLIGHTS, TRAFFIC SIGNALS, AND OTHER PUBLIC LIGHTING					
Scope	Emission Type	Greenhouse Gas Emissions (metric tons)			
SCOPE 2		CO ₂ e	CO ₂	CH ₄	N ₂ O
	Purchased Electricity	52.90	52.46	0.00	0.00
	Total Indirect Emissions	52.90	52.46	0.00	0.00
INFORMATION ITEMS		CO ₂ e			
	Purchased Electricity	99			
	Total Indirect Emissions	99			

Water Delivery Facilities

This sector includes emissions from equipment used for the distribution or transport of water, including drinking water, sprinkler systems and irrigation. The City of Auburn operates a small amount of water transport equipment- irrigation and sprinkler systems. Greenhouse gas emissions attributed to this sector are very minor, only .02 tons of CO₂e. Although the City of Auburn operates a wastewater treatment facility, most of the sewer system is gravity fed. The emissions of the lift systems that are in operation are included in the Wastewater sector. These emissions are included under Wastewater Treatment Facilities. Electricity consumption is the only source of greenhouse gas emissions from the operation of the City of Auburn's water transport equipment.

Table 11: Water Delivery Facilities Emissions by Subsector

Subsector (Equipment Type)	Metric Tons CO ₂ e	% of Sector Emissions	Electricity Use (kWh)	Cost (\$)
Irrigation / Sprinkler Systems	0.02	100%	76	\$93
Totals	0.02	100%	76	\$93

Table 12: LGO Protocol Report - Water Delivery Facilities Emissions by Scope and Emission Type

WATER TRANSPORT FACILITIES				
Scope	Emission Type	Greenhouse Gas Emissions (metric tons)		
SCOPE 2		CO ₂ e	CO ₂	CH ₄ N ₂ O
	Purchased Electricity	0.017	0.017	0.000 0.000
	Total Indirect Emissions	0.017	0.017	0.000 0.000

Wastewater Treatment Facilities

Wastewater coming from homes and businesses is rich in organic matter and has a high concentration of carbon and nitrogen (along with other organic elements). As wastewater is collected, treated, and discharged, chemical processes in aerobic and anaerobic conditions lead to the creation and emission of two greenhouse gases: methane and nitrous oxide. Local governments that operate wastewater treatment facilities, including treatment plants, septic systems, collection lagoons, and other facilities, must therefore account for the emission of these gases.

The City of Auburn operates its wastewater treatment plant in conjunction with OMI/CH2M Hill. The treatment plant service area includes both the entire incorporated City of Auburn as well as portions of its proposed sphere of influence that are able to gravity feed to the existing treatment site. In 2005, the facility served approximately 11,000 people utilizing a centralized treatment plant, producing 360 tons of CO₂e. Figure 6, and Tables 13-14 show that the most emissions result from facility energy use (86%), with the remaining impacts released as process emissions resulting from

the nitrification/denitrification of wastewater (14%). Electricity consumption results in the bulk of emissions from the wastewater treatment sector.

Figure 6: Wastewater Treatment Facilities Emissions by Subsector

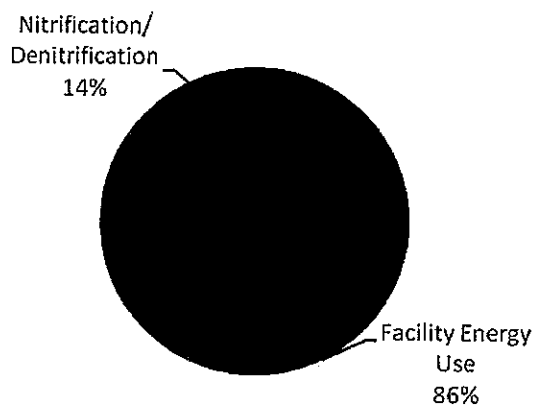


Table 13: Wastewater Treatment Facilities Emissions by Subsector

Subsector	Metric Tons CO ₂ e
Facility Energy Use	308
Nitrification/ Denitrification	52
Totals	360

Table 14: LGO Protocol Report - Wastewater Treatment Facilities Emissions by Scope and Emission Type

WASTEWATER TREATMENT FACILITIES					
Scope	Emission Type	Greenhouse Gas Emissions (metric tons)			
		CO ₂ e	CO ₂	CH ₄	N ₂ O
SCOPE 1	Process Emissions	52.05	0.00	0.00	0.17
	Total Direct Emissions	52.05	0.00	0.00	0.17
SCOPE 2	Purchased Electricity	307.63	305.11	0.02	0.01
	Total Indirect Emissions	307.63	305.11	0.02	0.01

Airport Facilities

Electricity consumption is the main source of greenhouse gas emissions from the operation of the city of Auburn's Airport Facilities, resulting in 29.94 metric tons of CO₂e. Remaining emissions from airport facilities result from the use of refrigerants, making up only .55 metric tons of CO₂e. See Table 15 for a breakdown of emissions by type.

Table 15: LGO Protocol Report – Airport Facilities Emissions by Scope and Emission Type

AIRPORT FACILITIES					
Scope	Emission Type	Greenhouse Gas Emissions (metric tons)			
SCOPE 1		CO ₂ e	CO ₂	CH ₄	N ₂ O
	Stationary Combustion	0.55	0.55	0.00	0.00
	Fugitive Emissions	0.00	0.00	0.00	0.00
	Total Direct Emissions	0.55	0.55	0.00	0.00
SCOPE 2		CO ₂ e	CO ₂	CH ₄	N ₂ O
	Purchased Electricity	29.91	29.66	0.00	0.00
	Total Indirect Emissions	29.91	29.66	0.00	0.00

Solid Waste Facilities

There are a variety of emissions associated with solid waste management services including the collection, processing, and storage of solid waste generated from residents and businesses. The most prominent source of emissions from solid waste facilities is fugitive methane released by the decomposition of organic waste over time in landfills. The scale of these emissions depends upon the size and type of the landfill and the presence of a landfill gas collection system. The City of Auburn operated a landfill from 1957 until it was decommissioned in 1983. Recology Auburn Placer is currently responsible for the post-closure of the landfill. Currently, perimeter-monitoring wells are used to monitor the landfill's effects on groundwater, however, it does not have a landfill gas collection system in place to measure fugitive methane emissions. Due to the unavailability of data, methane emissions were not calculated in the City's 2005 inventory.

Vehicle Fleet and Mobile Equipment

The vehicles and mobile equipment used in the City of Auburn's daily operations, including maintenance trucks used for parks and recreation to police cruisers and fire trucks; burn gasoline, diesel, and other fuels which results in greenhouse gas emissions. In addition, vehicles with air conditioning or refrigeration equipment use refrigerants that can leak from the vehicle.

In 2005, the City of Auburn operated a vehicle fleet with approximately 80 vehicles. The City of Auburn's vehicle fleet performed a number of essential services, from police monitoring to street sweeping. Figure 7 shows that gasoline use contributes to the highest portion of emissions (76%). As shown in Figure 8, in 2005, the majority of emissions resulting from vehicles in the fleet were attributed to the Police Department (46%). Table 16 outlines cost of fuels used to run vehicle fleet, and table 16 shows the amount of emissions resulting from fuel consumption (mobile combustion) and leaked refrigerants (fugitive emissions). Because specific quantity refrigerant data was not available, the default method was used to estimate emissions from leaked vehicle refrigerants. The amount calculated using these methods is a significant overstatement but in line with LGO Protocol methods.

Figure 7: Vehicle Fleet Emissions by Source

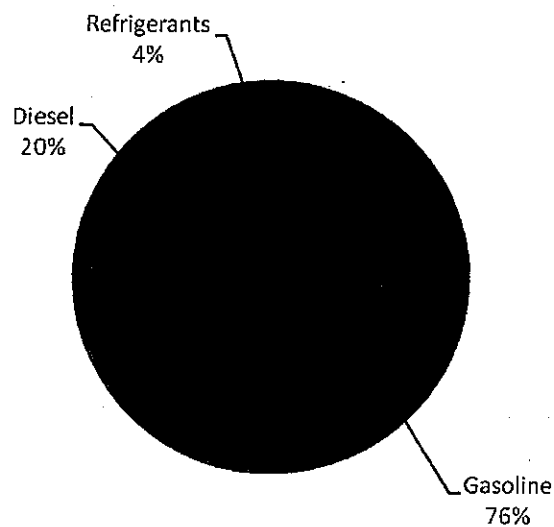


Figure 8: Vehicle Fleet Emissions by Department

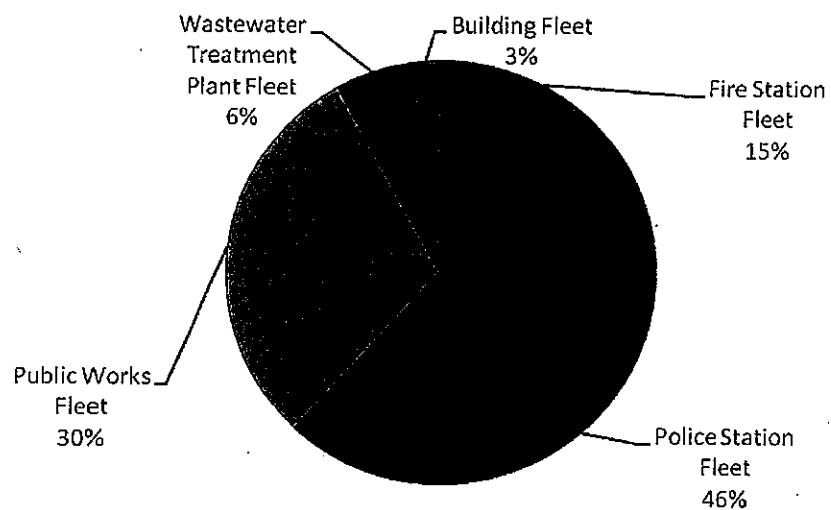


Table 16: Vehicle Fleet Emissions by Source

Source	Metric Tons CO ₂ e	Consumption (gal)	Cost (\$)
Gasoline	331.38	36,821	\$62,266.83
Diesel	75.34	8,350	\$13,361.99
Refrigerants	19.50	N/A	N/A
Totals	436.32	45,173	\$101,828.82

Table 17: LGO Protocol Report - Vehicle Fleet Emissions by Scope and Emission Type

VEHICLE FLEET					
Scope	Emission Type	Greenhouse Gas Emissions (metric tons)			
SCOPE 1		CO ₂ e	CO ₂	CH ₄	N ₂ O
	Mobile Combustion	416.72	408.55	0.02	0.03
	Fugitive Emissions	19.60	0.00	0.00	0.00
	Total Direct Emissions	436.32	408.55	0.02	0.03

Transit Fleet

In 2005, the vehicles and mobile equipment used in the City of Auburn's public transportation operations were comprised primarily of buses. The City operated 2 gasoline powered buses and 3 compressed natural gas powered buses throughout the year. Figure 10 shows the breakdown of emissions by source, with gasoline as the highest contributor to emissions (54 metric tons CO₂e, 44%). Table 17 outlines emissions by source, and table 18 defines emissions by type.

Figure 9: Transit Fleet Emissions by Source

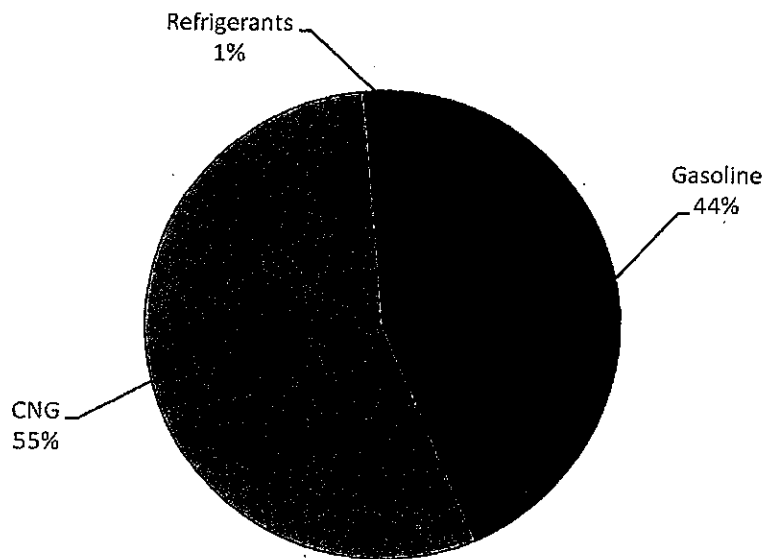


Table 18: Transit Fleet Emissions by Source

Source	Metric Tons CO ₂ e	Consumption (gal)	Cost (\$)
Gasoline	54	33,822	\$25,691.50
CNG	68	44,586	\$18,413.00
Refrigerants	2	N/A	N/A
Totals	124	78,408	\$45,104.50

Table 19: LGO Protocol Report - Transit Fleet Emissions by Scope and Emission Type

Scope	Emission Type	Greenhouse Gas Emissions (metric tons)			
		CO ₂ e	CO ₂	CH ₄	N ₂ O
SCOPE 1	Mobile Combustion	121.89	118.12	0.06	0.01
	Fugitive Emissions	1.30	0.00	0.00	0.00
	Total Direct Emissions	123.69	118.12	0.06	0.01
INDICATORS	Number of Vehicles	5			
	Vehicle Miles Traveled	59,979			

Government-Generated Solid Waste

Many local government operations generate solid waste, much of which is eventually sent to a landfill. Typical sources of waste in local government operations include paper and food waste from offices and facilities, construction waste from public works, and plant debris from parks departments. Organic materials in government-generated solid waste (including paper, food scraps, plant debris, textiles, wood waste, etc.) generate methane as they decay in the anaerobic environment of a landfill. Emissions from the waste sector are an estimate of methane generation that will result from the anaerobic decomposition of all organic waste sent to landfill in the base year. It is important to note that although these emissions are attributed to the inventory year in which the waste is generated, the emissions themselves will occur over the 100+ year timeframe that the waste will decompose.

Recology Auburn Placer provides the City of Auburn with garbage, debris box, and recycling services. The Western Placer Waste Management Authority owns and operates the materials recovery facility that the waste goes to. All government waste data was provided by Recology Auburn Placer. As shown in figure 10, solid waste emissions are somewhat equally distributed across departments, although solid waste generated at the airport produces the highest percentage of emissions (24%). Table 20 shows that, in total, solid waste generated 22.57 metric tons of CO₂e. Table 21 shows that all emissions attributed to this sector are considered Scope 3 emissions.

Figure 10: Government Waste Emissions by Subsector

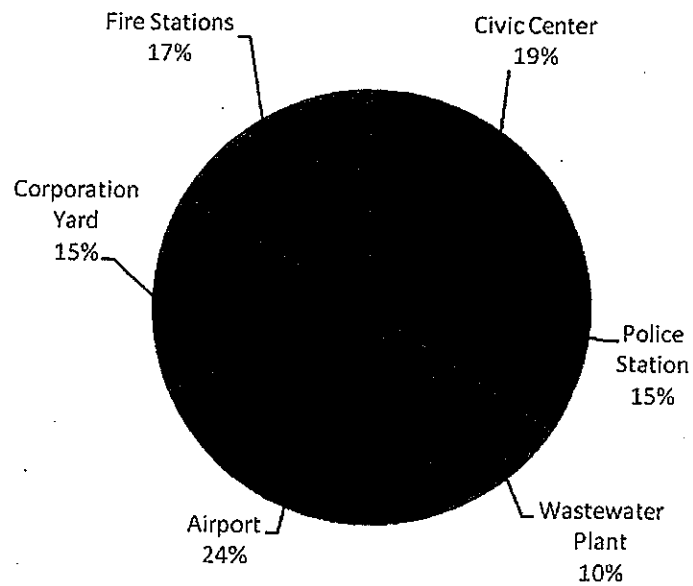


Table 20: Government Waste Emissions by Subsector

Department	Metric Tons CO ₂ e
Civic Center	4.44
Police Station	3.32
Wastewater Plant	2.21
Airport	5.48
Corporation Yard	3.32
Fire Stations	3.30
Totals	22.57

Table 21: LGO Protocol Report - Government Waste Emissions by Scope and Emission Type

Scope	Emission Type	Greenhouse Gas Emissions (metric tons)
SCOPE 3		CO₂e
	Waste All Facilities	22.57

Employee Commute

Emissions in the Employee Commute sector are due to combustion of fuels in vehicles used by government employees for commuting to work at the City of Auburn. Results from a survey designed by ICLEI and administered by the City are shown below. The survey was used to collect the data needed to calculate emissions and also capture other information that will help the City set effective policy addressing this sector.

Figure 11 represents emissions by vehicle class, revealing that the majority of respondents (62%) regularly commute to work in a light truck/SUV/pickup/van. Employee commute results in 294.75 metric tons of CO₂e, classified as a Scope 3 emission (refer to table 22 and 23). Indicator data on reasons for choosing a particular commute mode are outlined in Tables 24-28. The main reason given for not carpooling was "Work late or irregular hours" (20%). Most employees do not take public transit because it doesn't match their route or schedule (18%) or again because of irregular hours (18%). The majority of employees choose not to walk or ride a bike because they live too far away (33%). On a similar note, 24% of employees live 15-20 miles from work, while the other top response was 0-5 miles (25%), and most respondents commute 16-25 minutes to work (41%).

Figure 11: Employee Commute Emissions by Vehicle Class

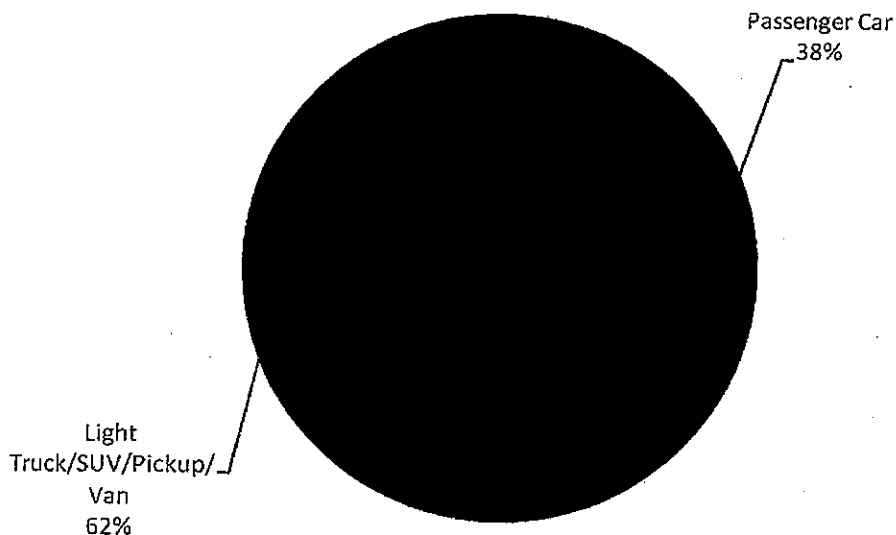


Table 22: Employee Commute Emissions by Vehicle Class

Vehicle Class	Metric Tons CO ₂ e
Passenger Car	111.67
Light Truck/SUV/Pickup/Van	183.08
Totals	294.75

Table 23: LGO Protocol Report - Employee Commute Emissions by Scope and Emission Type

Scope	Emission Type	Greenhouse Gas Emissions (metric tons)
SCOPE 3		CO ₂ e
	Mobile Combustion	294.747

Table 24: Employee Commute - Reasons for Not Carpooling Data

Reason	Percentage
Work late or irregular hours	20%
Other people do not match my schedule or route	19%
Need to make stops on the way to work or home	16%
May not be able to get home quickly in an emergency	10%
Dislike being dependent on others	9%
Like the privacy when I'm in my own car	8%
Difficult to find others to carpool/vanpool	5%
Need my car on the job	5%
Makes my trip too long	5%
Never considered carpooling or vanpooling	4%
Other	1%
I don't know enough about carpooling or vanpooling	0%

Table 25: Employee Commute - Reasons for Not Taking Transit

Reason	Percentage
Transit service doesn't match my route or schedule	18%
I work late or irregular hours	13%
May not be able to get home quickly during an emergency	12%
Need to make stops on the way to work or home	12%
It takes too long	11%
It is not safe or easy to walk to work from the transit stop	8%
Like the privacy when I'm in my own car	8%
It is too far to walk to work from the transit stop	4%
Need my car on the job	3%
Never considered using public transit	2%
It costs too much	1%
Not enough parking at the transit stop from which I'd depart	1%
I don't know enough about taking transit	1%
Other	1%

Table 26: Employee Commute - Reasons for Not Walking/Biking

Reason	Percentage
I live too far away	33%
There isn't a safe or easy route for walking or biking	15%
Weather	15%
Need to make stops on the way to work or home	13%
May not be able to get home quickly in an emergency	10%
It's not easy to look good and feel comfortable for work after walking or biking	7%
Workplace does not have adequate facilities for showering/changing	5%
No place at work to store bikes safely	2%
Never considered walking or biking to work	0%
I don't know enough about walking or biking to work	0%
Other	0%

Table 27: Employee Commute - Miles from Work Data

Miles	Percentage
0-5	24%
6-10	9%
11-15	13%
15-20	24%
21-25	9%
26-30	0%
31-35	6%
36-40	3%
41-45	3%
46-50	6%
51-75	0%
76-100	0%
Over 100	0%

Table 28: Employee Commute - Time to Work Data

Time (Minutes)	Percentage
Less than 5	12%
6 to 15	25%
16 to 25	41%
26 to 35	9%
36 to 45	9%
Over 45	3%

Inventory Methodologies

Buildings and Other Facilities

Scope 2 stationary emissions from buildings and other facilities were obtained from Pacific Gas and Electric Company. Energy usage data from PG&E was produced by the Rate Data Analysis Group, Phase 1 Gas and Electric GHG Summary for the City of Auburn for year 2005, based on energy usage of PG&E service accounts. Identification of the particular buildings and facilities listed on the rate analysis was obtained from Dean Stalder at the City of Auburn.

Included in the energy usage data from PG&E were emissions from two buildings not under the City's jurisdictional control. The emissions from these two buildings: the old City Hall located at 1103 High Street and the school district office were not included in the City of Auburn's greenhouse gas inventory.

Streetlights, Traffic Signals, and Other Public Lighting

Scope 2 stationary emissions from buildings and other facilities were obtained from Pacific Gas and Electric Company. Energy usage data from PG&E was produced by the Rate Data Analysis Group, Phase 1 Gas and Electric GHG Summary for the City of Auburn for year 2005, based on energy usage of PG&E service accounts. Streetlights designated as LS-1 rates were included in this inventory as an information item. These streetlights are PG&E owned, operated, maintained and indirectly paid for through the City's general rate case with PG&E.

Water Transport Facilities

The City of Auburn water transport emissions are entirely attributed to one energy account for a sprinkler system operated by the City. Energy usage data from PG&E was produced by the Rate Data Analysis Group, Phase 1 Gas and Electric GHG Summary for the City of Auburn for year 2005, based on energy usage of PG&E service accounts.

Wastewater Treatment Facilities

Scope 2 wastewater facility data was obtained through PG&E for OMI-CH2MHill (not City of Auburn). This data was obtained in a format different than the Rate Data Analysis Group, Phase 1 Gas and Electric GHG Summary for the City of Auburn. The data was broken down into four different service summaries. Given this data, it was not possible to accurately distinguish between facility and treatment plant energy usage. As a result, all Scope 2 emissions related to wastewater treatment, including lift stations, etc. are included in this area.

The City of Auburn's wastewater treatment plant is a centralized WWTP that uses a nitrification process to treat effluent. The wastewater treatment plant does not use anaerobic processes, nor does it include septic systems. Scope 1 nitrous oxide emissions were calculated using the Local Government Operations Protocol N2O Emission Methodology with Nitrification/Denitrification. Information about the treatment process itself was obtained through Greg Wiltfong with OMI – CH2MHill.

Airport Facilities

Scope 2 stationary emissions from the Auburn Municipal Airport were obtained from PG&E. Energy usage data from PG&E was produced by the Rate Data Analysis Group, Phase 1 Gas and Electric GHG Summary for the City of Auburn for year 2005, based on energy usage of PG&E service accounts. Specific airport facility and building information was obtained from Ivan Karnezis, the Auburn Municipal Airport's manager.

Solid Waste Facilities

The City of Auburn operated a landfill up until 1983 at which time it was decommissioned. Recology Auburn Placer is currently responsible for the post-closure of the landfill. Currently, perimeter monitoring wells are used to monitor the landfill's effects on groundwater, however, there is no landfill gas collection system in place to measure fugitive methane emissions. Due to the unavailability of data, methane emissions were not calculated in the City's 2005 inventory.

Vehicle Fleet and Mobile Equipment

Scope 1 mobile combustion CO₂ emissions were calculated using the Local Government Operations Protocol Alternate method – "Fuel use by vehicle type, model year and fuel type". The vehicle fleet's fuel usage data was obtained through Dawson Oil statements. Data gathered on vehicle types and model years was complete enough to use as aggregate entries in the CACP. Vehicle miles traveled were only partially available, so were estimated using fuel use as a means to estimate CH₄ and N₂O emissions. Vehicle information was obtained through Curt Simpson at the City of Auburn.

Because there is no detailed data in individual generator and off-road equipment, all emissions from these sources are included in this sector.

Transit Fleet

The City of Auburn kept records on both fuel usage and vehicle miles traveled in 2005 for all five buses. As a result, transit emissions were calculated using the Local Government Operations Protocol Recommended Method. The transit fleet does include one maintenance truck. As stated in the LGOP, "Emissions from vehicles used by the transit department but which are not themselves transit vehicles...should be reported as part of the vehicle fleet". The emissions from this vehicle are therefore included in the vehicle fleet emissions section.

Government-Generated Solid Waste

Data on the City of Auburn's generated solid waste was obtained through Recology Auburn Placer. Because solid waste weight data was not available, the final solid waste figures were estimated using waste container volumes and the frequency of waste pick-up.

Employee Commute

Employee commute data was obtained through both online and paper surveys distributed by City of Auburn staff. The survey was developed by ICLEI. Results were collected and conditioned electronically, using Microsoft Excel. The survey was distributed to current staff (78 employees), and was responded to by 34 employees, resulting in a response rate of 44%. This data was extrapolated using 2005 staff estimates to determine the expected estimates for 2005 employee commute patterns.

Next Steps

ICLEI's Five Milestone Process

While the City of Auburn has already begun to reduce greenhouse gas emissions through its actions, this inventory represents the first step in a systematic approach to reducing the City's emissions. This system, developed by ICLEI, is called the Five Milestones for Climate Mitigation. This Five Milestone process involves the following steps:

- Milestone One:** Conduct a baseline emissions inventory and forecast
- Milestone Two:** Adopt an emissions reduction target for the forecast year
- Milestone Three:** Develop a local climate action plan
- Milestone Four:** Implement the climate action plan
- Milestone Five:** Monitor progress and report results

Figure 12: ICLEI's Five Milestones for Climate Mitigation



ICLEI staff are available to local governments who are members and should be contacted to discuss the full range of resources available at each stage of the Milestone process. The following sections provide a glimpse at next steps and help capture the lessons learned in conducting this inventory.

Setting Emissions Reduction Targets

This inventory provides an emissions baseline that can be used to inform Milestone Two of ICLEI's Five-Milestone process—setting emissions reduction targets for the City of Auburn's municipal operations. The greenhouse gas emissions reduction target is a goal to reduce emissions to a certain percentage below base year levels by a chosen planning horizon year. An example target might be a 30 percent reduction in emissions below 2005 levels by 2020. A target provides an objective toward which to strive and against which to measure progress. It allows a local government to quantify its commitment to fighting global warming—demonstrating that the jurisdiction is serious about its commitment and systematic in its approach.

In selecting a target, it is important to strike a balance between scientific necessity, ambition, and what is realistically achievable. The City of Auburn should give itself enough time to implement chosen emissions reduction measures—noting that the farther out the target year is, the more the City should pledge to reduce. ICLEI recommends that regardless of the chosen long-term emissions reduction target (e.g., 15-year, 40-year), the City of Auburn should establish linear interim targets for every two- to three-year period. Near-term targets facilitate additional support and accountability, and linear goals help to ensure continued momentum around local climate protection efforts. To monitor the effectiveness of its programs, the City of Auburn should plan to re-inventory its emissions on a regular basis; many jurisdictions are electing to perform annual inventories. ICLEI recommends conducting an emissions inventory every three to five years.

The Long-Term Goal

ICLEI recommends that near-term climate work should be guided by the long-term goal of reducing its emissions by 80 percent to 95 percent from the 2005 baseline level by the year 2050. By referencing a long-term goal that is in accordance with current scientific understanding (established by the Intergovernmental Panel on Climate Change-IPCC¹), the City of Auburn can demonstrate that it intends to do its part towards addressing greenhouse gas emissions from its internal operations.

It is important to keep in mind that it will be next to impossible for local governments to reduce emissions by 80 to 95 percent without the assistance of state and federal policy changes that create new incentives and new sources of funding for emissions reduction projects and programs. However, in the next 15 years, there is much that local governments can do to reduce emissions independently. It is also important that the City of Auburn works to reduce its emissions sooner, rather than later: the sooner a stable level of greenhouse gases in the atmosphere is achieved, the less likely it is that some of the most dire climate change scenarios will be realized. Additionally, cost saving projects can be undertaken now – why wait to increase the quality of local government service and operations, while reducing taxpayer costs?

¹ <http://www.ipcc.ch/>

State of California Targets and Guidance

An integral component of the State of California's climate protection approach has been the creation of three core emissions reduction targets at the community level. While these targets are specific to the community-scale, they can be used to inform emissions targets for government operations as well. On June 1, 2005, California Governor Schwarzenegger signed Executive Order S-3-05 establishing climate change emission reductions targets for the State of California. The California targets are an example of near-, mid- and long-term targets:

- Reduce emissions to 2000 levels by 2010
- Reduce emissions to 1990 levels by 2020
- Reduce emissions to 80 percent below 1990 levels by 2050

The AB 32 Scoping Plan also provides further guidance on establishing targets for local governments; specifically the Plan suggests creating an emissions reduction goal of 15 percent below "current" levels by 2020. This target has informed many local government's emission reduction targets for municipal operations—most local governments in California with adopted targets have targets of 15 to 25 percent reductions under 2005 levels by 2020.

Departmental Targets

If possible, ICLEI recommends that the City of Auburn consider department-specific targets for each of the departments that generate emissions within its operations. This allows the City of Auburn staff to do a more in-depth analysis of what is achievable in each sector in the near, mid and long-term, and also encourages department leaders to consider their department's impact on the climate and institute a climate-conscious culture within their operations.

Creating an Emissions Reduction Strategy

This inventory identifies the major sources of emissions from the City's operations and, therefore, where policymakers will need to target emissions reductions activities if they are to make significant progress toward adopted targets. For example, since the vehicle fleet was a major source of emissions from the City of Auburn's operations, it is possible that the City could meet near-term targets by implementing a few major actions within the vehicle fleet. Medium-term targets could be met by focusing emissions reduction actions on the other major sectors (such as wastewater treatment plant and employee commute), and the long term (2050) target will not be achievable without major reductions in all of these sectors.

Please note that, whenever possible, reduction strategies should include cost-saving projects that both reduce costs (such as energy bills) while reducing greenhouse gas emissions. These options are important because they frequently represent win-win situations in which there is no downside to implementation. Selecting these projects in the order of largest to smallest benefit ensures that solid, predictable returns can be realized locally. These projects lower recurring expenditures, save taxpayer dollars, create local jobs, and benefit the community environmentally.

Given the results of the inventory, ICLEI recommends that the City of Auburn focus on the following tasks in order to significantly reduce emissions from its government operations:

- Continue replacing less fuel efficient fleet vehicles with more efficient/hybrid vehicles
- Encourage methods that reduce employee commute (ride share, transit incentives, etc.)

In addition to these tasks, the City of Auburn has already implemented measures that are likely to reflect as major reductions, if and when an updated inventory is completed. Measures such as the installation of a photovoltaic system at the wastewater treatment plant, purchasing of hybrid cars, and installation of a CNG fueling station have likely significantly reduced emissions in the top emitting sectors described in this report.

Continued use of these strategies and implementation of new strategies as a basis for a more detailed overall emissions reductions objective, or climate action plan, will serve as reductions in the City of Auburn's impacts in terms of greenhouse gas emissions. In the process, it may also be able to improve the quality of its services, reduce costs, stimulate local economic development, and inspire local residents and businesses to redouble their own efforts to combat climate change.

Improving Emissions Estimates

One of the benefits of a local government operations emissions inventory is that local government staff can identify areas in their current data collection systems where data collection can be improved. For example, a local government may not directly track fuel consumption by each vehicle and instead will rely upon estimates based upon VMT or purchased fuel to calculate emissions. This affects the accuracy of the emissions estimate and may have other implications for government operations as a whole.

During the inventory process, through working with City of Auburn staff to request and condition data, the intern identified the following gaps in data that, if resolved, would allow the City to meet the recommended methods outlined in LGO Protocol in future inventories.

- Direct tracking of refrigerants recharged into HVAC and refrigeration equipment
- Direct tracking of fire suppressants recharged into fire suppression equipment
- Fuel consumption by individual vehicles
- Odometer readings of individual vehicles – beginning of year and end of year
- Fuel consumption by mobile equipment
- Fuel consumption and hours used by diesel and other generators
- Refrigerants recharged into vehicles in the vehicle fleet
- Waste generated from government facilities by weight

ICLEI encourages staff to review the areas of missing data and establish data collection systems for this data as part of normal operations. In this way, when staff are ready to re-inventory for a future year, they will have the proper data to make a more accurate emissions estimate.

Project Resources

ICLEI has created tools for the City of Auburn to use to assist with future monitoring inventories. These tools are designed to work in conjunction with LGO Protocol, which is the primary reference document for conducting an emissions inventory. The following tools should be saved as resources and supplemental information to this report:

- The “Master Data Workbook” that contains most or all of the raw data (including emails), data sources, emissions, notes on inclusions and exclusions, and reporting tools
- The “Data Gathering Instructions” on the types of emissions and data collection methodology for each inventory sector

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